

WHAT IS CLAIMED IS:

1 1. A thin film transistor, comprising a source electrode, a drain electrode, a gate electrode
2 and a semiconductor layer, wherein one of the source electrode, the drain electrode, and the gate
3 electrode comprises an aluminum alloy layer disposed between a pair of titanium layers.

1 2. The thin film transistor of claim 1, wherein the aluminum alloy layer comprises about 0.1
2 to 5 wt% of at least one element selected from a group consisting of silicon, copper, neodymium,
3 platinum and nickel.

1 3. The thin film transistor of claim 1, wherein a diffusion prevention layer is interposed
2 between the aluminum alloy layer and each of the pair of titanium layers.

1 4. The thin film transistor of claim 3, wherein the diffusion prevention layer is made of
2 titanium nitride.

1 5. The thin film transistor of claim 4, wherein the titanium nitride layer has a thickness
2 between 100 and 500Å.

1 6. The thin film transistor of claim 4, wherein the titanium nitride layer contains 5 to 85 wt%
2 of nitrogen.

1 7. The thin film transistor of claim 1, each electrode being absent of pure aluminum.

1 8. A flat panel display, comprising:

2 a substrate;

3 a first plurality of thin film transistors formed on a surface of the substrate, the first plurality
4 of thin film transistors comprising first source electrodes, first drain electrodes, first gate electrodes,
5 and semiconductor layers;

6 a plurality of first conductive lines electrically connected to the first source electrodes; and

7 a plurality of second conductive lines electrically connected to the first gate electrodes;

8 a second plurality of thin film transistors, wherein the first drain electrodes of the first
9 plurality of thin film transistors are electrically connected to gate electrodes of the second plurality
10 of thin film transistors, wherein one of the first source electrodes, the first drain electrodes, the first
11 gate electrodes, the plurality of first conductive lines, and the plurality of second conductive lines
12 comprises an aluminum alloy layer and a titanium layer formed on one surface of the aluminum alloy
13 layer.

1 9. The flat panel display of claim 8, wherein the aluminum alloy layer comprises about 0.1
2 to 5 wt% of at least one element selected from the group consisting of silicon, copper, neodymium,
3 platinum and nickel.

1 10. The flat panel display of claim 8, wherein a diffusion prevention layer is interposed

2 between the aluminum alloy layer and the titanium layer.

1 11. The flat panel display of claim 10, wherein the diffusion prevention layer is made of
2 titanium nitride.

1 12. The flat panel display of claim 11, wherein the titanium nitride layer has a thickness
2 between 100 to 500Å.

1 13. The flat panel display of claim 11, wherein the titanium nitride layer contains 5 to 85
2 wt% of nitrogen.

1 14. A TFT, comprising:

2 a source electrode, a gate electrode and a drain electrode; and

3 a semiconductor layer between the source electrode and the drain electrode, wherein one of
4 said source electrode and said drain electrode contain an aluminum alloy layer and not a pure
5 aluminum layer.

1 15. The TFT of claim 14, wherein the aluminum alloy layer comprises about 0.1 to 5 wt%
2 of at least one element selected from the group consisting of silicon, copper, neodymium, platinum
3 and nickel.

1 16. The TFT of claim 14, said aluminum alloy layer being bounded by a titanium layer.

1 17. The TFT of claim 14, said semiconductor layer being absent of aluminum after said TFT

2 is subjected to a heat treatment of at least 300 degrees Celsius.

1 18. The TFT of claim 14, said semiconductor layer being primarily made of silicon and said

2 semiconductive layer forming a conductive channel between said source electrode and said drain

3 electrode upon application of a voltage to the gate electrode after said TFT is exposed to heat of at

4 least 300 degrees Celsius.

1 19. The TFT of claim 14, said source electrode and said drain electrode both being formed

2 of aluminum alloy and both being absent pure aluminum.

1 20. The TFT of claim 19, said source electrode and said drain electrode each comprising a

2 TiN diffusion prevention layer between the aluminum alloy layer and each titanium layer.